Fact Sheet

Swine Reproduction

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Management of the Boar

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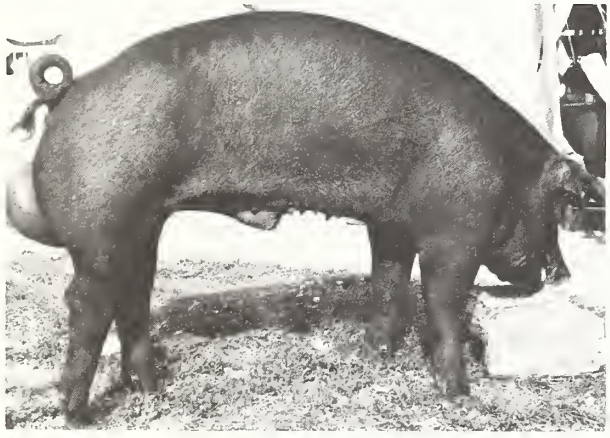
The goal of any good swine breeding program is to have a high percentage of sows farrow large litters in a short period. The following boar management practices before, during and after the breeding season will help you, the swine producer, to reach this goal.

When to Buy Herd Boars

Boars should be purchased at least 45-60 days before the breeding season starts. This gives you ample time to locate superior animals and, once they are selected, to check them for health, condition them to your farm, and test-mate or evaluate them for reproductive performance.

A desirable herd boar should be highly fertile, of good conformation, and should possess the genetic potential to sire efficient, fast-growing, profitable pigs which have meaty carcasses.



Adjustment Policy

The code of fair practices adopted by the National Association of Swine Records is a good guideline to follow. The consignor or seller is responsible for settlement of all claims. All boars over 6 months of age are guaranteed breeders, except when they are allowed to run with the sow herd. All requests for adjustments should be made within a reasonable time after date of delivery to buyer. Should any boar prove to be a nonbreeder, the seller should make a replacement satisfactory to the buyer, or refund the purchase price, upon return (usually sold at market) of the boar in healthy condition and satisfactory state of flesh. The seller has the right to reserve a trial period of as much as 30 days before making final adjustment on any boar that fails to serve or settle the sows.

Regardless of where you buy herd boars, it is recommended that both you and the seller understand the sale policy and responsibilities **before** the transaction. A reputable breeder will gladly enter into a written agreement with the buyer concerning fair adjustment if problems develop with the boar. Such a breeder is also usually willing to serve as consultant to the buyer in selecting boars. He's an excellent source of practical swine management information, and his suggestions should be carefully considered. Both breeder and buyer gain if no adjustment is required on a boar.

Transporting Newly Purchased Boars

Proper care in transporting boars insures maximum service by minimizing possible stresses, injuries and diseases. Any stress or disease that causes high temperatures can lower fertility or even produce temporary sterility which might last 6-8 weeks. Therefore, carefully follow these suggestions when transporting your boar:

1. Avoid shipping boars that have just been taken off a self-feeder or have been fed within an hour or two before loading.

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2. Have safe, well-built loading and unloading facilities.
3. Clean and disinfect the truck before transporting the boars.
4. Provide in the covered truck suitable bedding (sand in summer, straw in winter) and protection against weather.
5. Use a divider when hauling strange boars together in the same truck.

Isolation

Isolate a newly purchased boar at least 30 days in quarters that have been cleaned and disinfected 2 weeks before the boar arrives. The isolation facility, to be adequate, should (1) be located several hundred feet from the rest of the herd; (2) provide protection from extreme weather conditions; (3) allow about 20 square feet of dry, draft-free, well-ventilated sleeping area per animal; and (4) be adjacent to an exercise area, preferably pasture.

Type of Rearing Environment

If the seller raised the boars on soil and the buyer places them on slats or concrete, lameness due to sore feet may result. Therefore, purchase boars reared in an environment similar to that in which they will be used.

Health Check and Parasite Control

Chances of health or parasite problems are greatly reduced by purchasing boars from clean herds. Exactly what health measures are needed depends largely on the previous health-management record of the boar. Regardless of that record, however, the buyer should have all purchased boars inspected by a veterinarian sometime during the initial 30-day isolation. The following health measures during that time are recommended:

1. Ask the seller if the boar has recently been treated for internal and external parasites. If not, do so immediately.
2. The boar should be re-vaccinated for erysipelas and leptospirosis.
3. Boars should be from a **validated** brucellosis-free herd. If he is from a **non-validated** herd, he should have passed a negative brucellosis test within 30 days before purchase. An additional 30-45-day period of fence-line exposure to the sow herd is recommended to develop immunities before his use.

Feeding

If the seller's boar ration is drastically different from yours, it is a good idea to buy about 50-75 pounds of his ration to make a gradual transition to your feeding program. Also, if you encounter any nutritional problems during the isolation and breaking-in period, let the breeder know; he may be able to give you assistance.

Young boars are still growing and should not be underfed. Depending on age and condition, the herd boar heading into the breeding season should receive between 4 and 6 pounds of a balanced 14% protein ration per day—5-6 pounds for the younger boars; 4-5 pounds for the older ones. Also consider increasing the feed level 2 weeks before and during the breeding period.

Adequate nutrition is equally important **after** the breeding season. How much feed is required depends on the boar's body condition and the amount of time between breeding periods. But generally an average conditioned boar not in service can be maintained on about 4 pounds daily of a balanced 14% protein ration.

Formulation of special boar rations may be justified when several boars are to be maintained. However, in most herds, a well-balanced sow gestation ration is adequate. When limit feeding any ration to reduce the energy intake, be certain that adequate levels of protein, vitamins, and minerals are present to meet the boar's requirements for these nutrients.

Test-Mating and Semen Evaluation

Records indicate that about 1 in 12 young untried boars have a fertility problem of some nature that renders them either sterile or subfertile. The simple practice of test-mating can save many dollars in lost time and facilities by identifying a problem boar before the breeding season starts. Boars are not normally sexually mature until at least 7 months of age and should not be used before this. Boars should be test-mated at about 7½-8 months of age and after their isolation period. The procedure is as follows:

1. Take a gilt in estrus (heat) to the boar, and observe the boar for aggressiveness and desire to mate.
2. Give the boar assistance the first service or two, if necessary. Often, young boars will mount the front end of a gilt, a bad habit learned back in the boar pen and a possible source of injury. If the boar mounts this way, gently move him around to the proper position. He should soon learn to mount correctly.
3. Observe for the boar's ability to enter the gilt. Check for a limp, infantile or tied penis. If a gilt is mated, observe her 18-22 days later to determine if she becomes pregnant. More than one gilt should be bred for best accuracy.
4. If possible, collect a semen sample and have it evaluated. Semen collection by hand pressure technique is preferred, but one can also get a sample from semen runback while the boar is breeding the gilt. Have your veterinarian or a qualified technician evaluate the sample for semen quality, i.e., sperm motility, concentration, morphology and semen volume. With a minimum amount of training, most producers could learn to perform this evaluation themselves.

There is no absolute laboratory test for fertility; but through test-mating and semen evaluation, it is often possible to detect a sterile boar or one of questionable fertility. If a boar exhibits adequate libido (sex drive), has a visibly normal reproductive system, and if tests are taken and reveal good semen quality, chances are high that he will be a good breeder.

Determining Adequate Boar Power

It's important that adequate boar power be provided for the groups of females to be bred. Generally, a young boar can pen-breed 8 or 10 gilts during a 4-week breeding period; a mature boar, up to 10 to 12. Don't turn a young, untried boar in with a group of sows just weaned and coming into heat. The results could be disastrous, and you may lose a boar from fighting or over-exertion. Be sure to allow for adequate boar power when breeding a group of sows at the first post-weaning estrus period because they will all tend to cycle within 4-7 days after weaning. There is even a chance that all sows could be in heat the same day.

To determine adequate boar power for your herd, think in terms of number of services required per week, rather than number of sows per boar. A young boar (8½-12 months) should service no more than 1 time a day and 7 times a week. A mature boar (over 12 months), on the other hand, can be used for 2 services a day and should not exceed 10 per week. Some boars will breed a sow or gilt more than once during her estrous period. Even in a group of 8-10 gilts, it is probable that 2 or more will be in heat on the same day and the chances of all of them getting bred and conceiving are not high. If the estrous cycles of a group of sows tend to be synchronized within 3-5 days, more boar power is needed than if the group comes into heat over 1-3 weeks.

Recommended maximum number of services per boar, by age

Boar	Daily	Weekly
Young (8½-12 months)	1	7
Mature (over 12 months)	2	10

Breeding Schedule and Method

Hand Breeding vs Pen Breeding. Pen breeding requires less labor; this accounts for its present popularity. Nevertheless, there are some definite advantages for the hand breeding system. There is less stress on the boar in getting a large number of females mated to him. Hand breeding with the use of a breeding crate also makes it possible to breed gilts to old boars or breed old sows to young boars. When sows are bred in confinement on concrete or slotted floors (20 sq.ft. per head) hand breeding is essential.

With hand breeding it is easier to know the exact breeding date, and you can insure that each sow or gilt is bred twice. Breeding animals twice during the heat period 12-24 hours apart, on the average will increase conception rate by about 10% and litter size by one pig.

When using the pen breeding system, it is recommended that sows or gilts be divided into groups of 10-12 and one boar be put with each group. **Again, be sure to provide more boar power if sows are to be weaned and bred back in groups.** Consider also the practice of alternating or rotating boars among pens. This helps prevent a group of sows from not becoming bred because of a sterile boar. It allows a producer to keep two groups of boars—one group being mature, proven boars; the other being young, unproven boars. It also increases the opportunity for observing boars and sows mate, and to spot breeding problems if they occur.

Breeding Area

Provide an adequate breeding area. Remove any wire, boards, or objects which may cause injury. Good footing is a must to avoid injury and reluctance to mate. Avoid wet, slippery floors in confinement. Slats that have a "pencil-round" edge are generally acceptable in the breeding area for hand mating, whereas slats with a sharp edge are not. Many surfaces such as artificial turf, rubber mats, and sand have been used in confinement breeding operations. However, cement that is "struck off" with a 2" x 4" or wood float results in a quite desirable surface. Some producers have found that maintaining a sprinkle of lime on the floor is helpful in providing good footing.

Use Individual Boar Pens

It is advisable to keep boars in individual boar pens unless pen mating a large number of sows. Individual pens eliminate fighting, riding, and competition for feed. Longevity is normally improved by penning boars separately. In the latter case, it is best to pen together the boars that are to be turned in with a group of sows. They must be provided with shelter, shade, and clean water.

Space Requirements for Boars

Exercise Area. The outside boar lot should be about ¼ acre or a minimum of 75-100 feet long. Housing and feeding areas should be separated to encourage exercise. Boars in confinement should be individually penned in pens approximately 8x8 feet.

Housing and Shade. Allow about 20 square feet of dry sleeping space, when boars are penned in groups. Use straw or similar bedding material in winter. Many producers have successfully maintained boars on slats or solid concrete in confinement. In hot weather, keep the boar cool.

Feeding Space. Allow 20-24 inches of trough space per boar.

Waterers. Allow 1 cup or 1 foot of watering space for each 3 boars. Water requirements range from 2 to 5 gallons per day depending on boar size and weather. Fresh water should be supplied at all times.

If boars must be penned together, the maximum number is 3 if they are the same age and weight. If more than one boar is kept in a pen, make provision to feed the boars individually.

Keep Boars Cool during Summer

Research has shown that boars subjected to high temperatures may have reduced semen quality resulting in a reduced fertility rate for 4 to 6 weeks after the stress period. Females bred to boars that have been subjected to heat stress during hot summer months may have a lowered conception rate and smaller litter sizes.

It is recommended that swine producers make every effort to keep boars cool and comfortable during summer months to help insure high conception rates and large litters. Adequate shade for the boar will help. A fogging system under a shade built over a sand or a concrete floor would be even better. A concrete hog wallow is another possibility. For breeding in confinement, an evaporative cooling system is recommended.

Handle with Care!

Boars can be dangerous. They should always be handled with care and with proper equipment. It is never safe to keep a boar with tusks, for he may inflict injury on the handler or on other hogs. All tusks should be removed well in advance of breeding season and on a routine basis every 6 months. Bolt cutters can be used to remove boar tusks.

Summary

Proper selection and management of herd boars return big dividends to the swine producer. Many potential problems—and costly ones—can be detected and prevented when you pay attention to the boar **before** breeding season. In review, your careful consideration of these practices can mean good conception rates, larger litters and productive offspring:

1. Purchase boars early.
2. Use proved selection criteria.
3. Select top performance-tested boars.
4. Isolate the boar on your farm for at least 30 days prior to use.
5. Test-mate with gilts and get a semen evaluation if possible.
6. Maximize fertility by providing adequate boar power, rotating boars or hand-mating, providing an adequate breeding area, keeping them cool during the summer months and using other sound management practices.
7. Keep good breeding records.
8. Maintain good management practices during the off-season.

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